MISCELLANEOUS NOTES.

No. I.—CROCODILES IN ARTIFICIAL RESERVOIRS.

During April last, rewards were paid by the Bombay Municipality to the three peons employed in guarding Vehar and Tulsi Lakes for the production of ninety-one crocodiles' eggs found on the borders of Tulsi and for the two crocodiles which were shot at Vehar. One of these measured nine feet, and the other one five feet. The reward for crocodiles' eggs, found on the banks of these reservoirs, is two annas each egg, and the reward for killing crocodiles is one rupee per lineal foot of carcase on production of the saurian.

H. W. BARROW.

MUNICIPAL OFFICES, BOMBAY, 1*st June*, 1895.

No. II.—DESCRIPTION OF THE TRANSFORMATIONS OF *ARRHOPALA PARAMUTA*, DE NICEVILLE, A LYCÆNID BUTTERFLY.

Two lycænid larvæ were found on the Fagoo Tea Estate in the Western Duars at 2,500 feet elevation above the sea. Length about $\frac{7}{8}$ of an inch. Onisciform, flattened, covered with downy bristles, semi-transparent, dull whitish, becoming more opaque and white dorsally ; an olive-brown medial dorsal line throughout ; two short white protrusible brush-like tentacles on the twelfth segment, a medial small orifice on the eleventh segment probably exuding a fluid, as it is vigorously attended by a small black ant, the latter apparently tickling the larva with its antennæ to make it do so. The larva is very similar to that of *Arrhopala abseus*, Hewitson, which I discovered on Sal trees attended by a large red ant in 1890. Before pupating the larva becomes pinkish with a tinge of purple. It feeds on the leaves of *Castaneopsis* sp.

Pupa. Pale brown, with a darker dorsal streak and irrorated slightly on the back with dark brown. Abdomen rather flattened. Emerged on 19th May, 1895, both females.

G. C. DUDGEON, F.E.S.

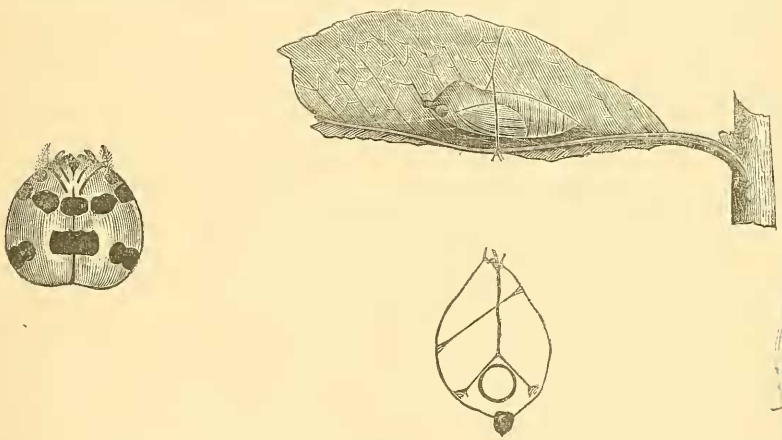
FAGOO TEA ESTATE,
WESTERN DUARS, *May 25th*, 1895.

No. III.—DESCRIPTION OF THE TRANSFORMATIONS OF *BADAMIA EXCLAMATIONIS*, FABRICIUS, A HESPERID BUTTERFLY.

A hesperid larva was found on the Fagoo Tea Estate in the Western Duars at 1,500 feet elevation above the sea. It had formed the usual case or shelter by webbing the edges of a leaf together. Superficially it was somewhat like the figure of the larva of *Hasora bhadra*, Moore, given in Horsfield and

Moore's Cat. Lep. Mus. E. I. Co., but was without the long hairs. Length rather more than an inch. Colour velvety-black with transverse patches of yellow striations on the middle of each segment divided dorsally by a black line. The segmental interspaces are yellowish, and the front of each segment is black, with a lateral row of yellow spots, one on each segment, those black portions are broadest on the second, third, fifth, seventh, ninth, and eleventh segments. Head yellow-ochre with two transverse rows of rectangular black spots, five in each row, those of the lower row being somewhat rounded and more separated ; the two first of the upper row being conjoined. There is also a lower black spot out of line on each side. The larva feeds on a species of *Ficus*, called by the Nipalese " Barrha."

Pupa formed in the same manner as that of *Rhopalocampta benjaminii*, Guérin, that is to say, within a rolled up leaf, across the inner portion of which, some thick white webs or strands of silk are stretched ; round the abdomen the web is fastened in a way I did not notice before, which can be seen from the accompanying sketch.



As I was fortunate enough to observe the change, I saw that, although the anal prolegs of the larva were attached to a tuft or pad of silk in the usual way and remained so until nearly the whole skin had been shuffled off, yet when the last segment had to be taken out the pupa drew it entirely away from the skin and lifted it over the empty skin, and by a series of contortions similar to those made by an insect in depositing an egg, it soon reattached its anal segment or tail to the web, throwing away the cast-off skin by wriggling its body about. When it had first changed most of the black markings of the larva were still present although reduced to spots, the ground-colour being dark yellowish. The head, as in *Choaspes* (*Ismene* and *Rhopalocampta* apud Watson) has a distinct knob. After a few hours, the pupa having become hardened, it is covered with a chalky white substance, leaving

the first two abdominal segments only without the covering. In appearance the pupa is similar to that of *Choaspes* (*Ismene*) *gomata*, Moore ; being longer than, but of a similar type to, that of *Rhopalocampta benjaminii*, Guérin. The imago emerged on 19th May, 1895.

G. C. DUDGEON, F.E.S.

FAGOO TEA ESTATE,
WESTERN DUARS, *May 25th*, 1895.

No. IV.—NOTES ON SOME NILGIRI BIRDS.

The Nilgiri District, though possessing a considerable bird-fauna, has been so thoroughly worked in the past that little remains to be recorded regarding its ornithological features. Observers such as Dr. Jerdon, Miss Cockburn and the late Mr. Davison do not leave much to be gleaned by those who come after them. The last named writer published a fairly complete list of the birds of the District in "Stray Feathers" (volume x, part 5) some twelve years ago, and it is not likely that many important additions will be made to this list. The following notes consequently mostly refer to details left doubtful or unnoticed hitherto. They are the result of very scanty leisure and do not pretend to be more than hasty jottings regarding desultory observations.

The first bird I propose to refer to is that exceedingly neat and dapper individual, *Larvivora brunnea* (Hodgs.). Mr. Oates states that this bird is a permanent resident on the Nilgiris, and this statement is supported by Davison, who mentions that he twice found its nest. It is perhaps incautious to impugn these statements on merely negative evidence, but it is remarkable that in a ten-year acquaintance with the Nilgiri Sholas I have never seen this bird except in the cold months. At that time of the year it is not uncommon on the slopes of the Hills, and though very silent and unobtrusive, it is by no means shy. Mr. Bourdillon in his "First List of the Birds of the Travancore Hills" (Stray Feathers, iv. 401), expresses the belief that *L. brunnea* is only a winter visitor to that part of the peninsula. I think the question of its permanent residence on the Nilgiris should also be considered open. Is it possible that the nests which Davison assigned to this bird belonged to *Brachypteryx rufiventris* (Blyth)? It is certain that the description and measurement of the eggs coincide, and that the egg ascribed to *L. brunnea* would be very large for so small a bird.

There is another point on which I feel disposed to question Mr. Davison's authority, *viz.*, with regard to the singing powers of *Oreocincla nilgiriensis* (Blyth). Mr. Oates writes, "Represented to be a very fine songster," and Mr. Davison states, "It is a glorious songster and its rich and varied song can be heard for nearly a mile." On the other hand, another authority, Mr. Rhodes Morgan, tells us (Nests and Eggs, ii, 108), "It utters now and then a single clear warbling note, but appears to have no song," and my own